

Blumberg

NO. 30 FEB COMMISSIONING STUDIES FRIDAY, MAY 25, 1973

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Scheduled: 0001-0800 Actual: 0500-0800

(Note: 5/24 studies 0-0800 were cancelled due to Linac P.S. failure)

Objectives: (1) Measure horizontal emittance at high AGS intensity.  
(2) Demonstrate capability for extraction out IOC.

Results: (1) With AGS at  $9 \times 10^{12}$  ppp we inserted magnets. H10 magnet is an injection aperture with downstream end at 2.3" from B.C. axis. In operating position of 2.0" we decrease (early) cBM to  $8 \times 10^{12}$ . On flattop we had  $7 \times 10^{12}$  remaining. We had difficulties - first with RF turn-off which caused AGS beam to fluctuate, next with FEB power supplies. Drift in timing the firing of the 4 capacitor banks of C15 kicker prevented us from obtaining the 3  $\mu$ s 8000A waveform which allowed full extraction on 5/22. There was qualitative evidence that at least one bunch of the many that appear on external current transformer per spill was fully extracted, giving us confidence that with proper kicker current we can fully extract at high intensity. It did not seem worthwhile to try emittance measurements with such erratic spill.

(2) There was no time to change H10 magnet polarity and try getting shaved beam to IOC.

# AGS Physics Group Talk

Fri. June 15, 1973

## FEB Studies results and plans.

June 15 p.9 E10 + H10 bump orbits. 40 mm and 37 mm respect.

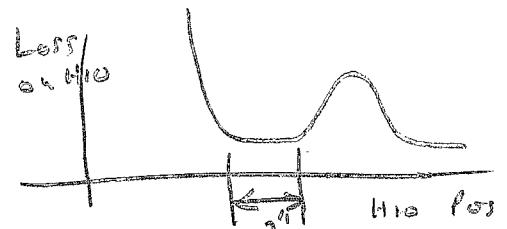
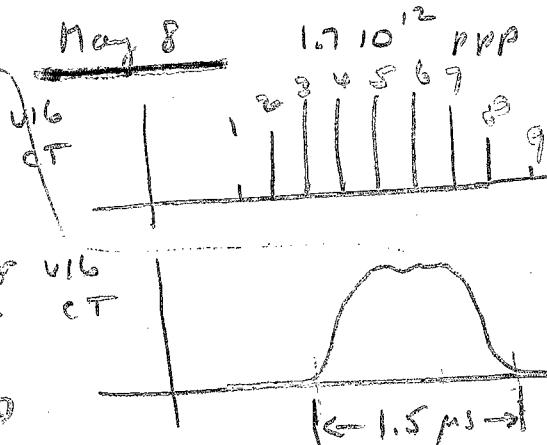
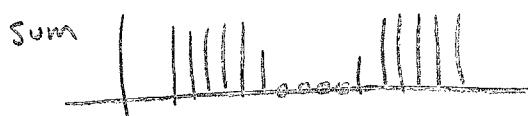
June 29 p.16 C15, E15 kickers.

Aug. 8 p.21 Note vertical oscillation induced by kickers.

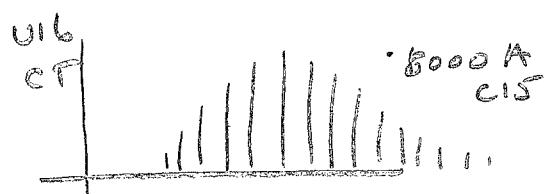
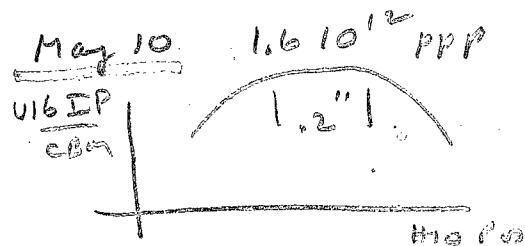
April 10  $V_V$  measurements at  $E3 \approx 0$   $V_V \approx 8.65$ . No  $\Delta V_V$  from bumps, as expected.

Apr 26

May 1. with  $CBM = 4.7 \cdot 10^{12}$ , injection aperture at  $E10 = 15.61''$  we extracted but didn't see spot on  $V16$  flag.



post FEB loss observed.



May 14

8:30

May 16 vertical profiles.  $3.5 \cdot 10^{12}$  bunched. Still see post-FEB loss!

May 17 degrated FEB.  $5 \cdot 10^{12}$  bunched.

May 22. FEB+SEB compatibility. Full extraction of  $4 \cdot 10^{12}$  bunched; using large C15 extract kicks.

MAY 26 saw that H10 is an aperture, starting with direct, measured at  $2.3''$  wrt BL axis